

What is claimed is:

1) A hand-held device for providing communication between a wide area network and a wireless local area network, comprising:

(a) a storage device;

(b) a processor coupled to the storage device; and,

(c) wherein the storage device stores a router software component for transferring a packet between the wide area network and the wireless local area network.

2) The hand-held device of claim 1, wherein the packet is an Internet Protocol ("IP") packet.

3) The hand-held device of claim 1, wherein the wide area network includes a plurality of public IP addresses and the wireless local area network includes a plurality of private IP addresses, and wherein the router software component translates a first IP address in the plurality of public IP addresses to a second IP address in the plurality of private IP addresses.

4) The hand-held device of claim 1, wherein the device includes a Bluetooth™ processor and a 2.4 GHZ transceiver.

5) The hand-held device of claim 1, wherein the wide areas network is the Internet.

6) The hand-held device of claim 1, wherein the wide area network includes a cellular network.

7) The hand-held device of claim 1, wherein the wide area network includes a corporate network.

8) The hand-held device of claim 1, wherein the wide area network includes a private IP network.

9) The hand-held device of claim 1, wherein the wireless local area network is a Bluetooth™ wireless local area network.

10) The hand-held device of claim 1, wherein the wireless local area network is a 802.11 wireless local area network.

11) The hand-held device of claim 1, wherein the router software component includes a network address translator ("NAT") component for translating between a first wide area network address and a first local area network address.

12) The hand-held device of claim 1, wherein the router software component includes a network address port translation ("NAPT") component for translating between a first wide area network address and a first local area network address.

13) The hand-held device of claim 1, wherein the router software component includes a local routing software component for routing an IP packet between a first wireless device in the wireless local area network and a second wireless device in the wireless local area network.

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14) The hand-held device of claim 1, wherein the router software component includes an interface for adding a first network service software component for providing a network service to the wireless local area network.

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15) The hand-held device of claim 14, wherein the first network service software component is loaded into the storage device from a managing processing device in the wide area network.

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16) The hand-held device of claim 14, wherein the first network service software component is loaded into the storage device during manufacturing of the hand-held device.

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17) The hand-held device of claim 14, wherein the first network service software component is a pairing management software component for determining whether a first wireless device is coupled to the wireless local area network, responsive to a signal from the managing processing device in the wide area network.

18) The hand-held device of claim 14, wherein the first network service software component is a virtual private network software component for establishing a secure link.

5 19) The hand-held device of claim 14, wherein the first network service software component is a firewall software component.

20) The hand-held device of claim 14, wherein the first network service software component is a statistics software component for collecting usage information of the wireless local area network.

21) The hand-held device of claim 20, wherein the statistics software component collects usage information of a first wireless device in the wireless local area network.

15 22) The hand-held device of claim 20, wherein the statistics software component collects usage information of an application software component in a first wireless device in the wireless local area network.

20 23) The hand-held device of claim 14, wherein the first network service software component includes a link optimization software component for converting an IP packet from a first wireless device in the wireless local area network to an optimized cellular protocol packet transferred to a processing device in the wide area network.

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24) The hand-held device of claim 14, wherein the first network service software component includes a reverse firewall software component for dropping a packet from a first wireless device in the wireless local area network.

25) The hand-held device of claim 14, wherein the first network service software component includes a reverse firewall software component for dropping a packet from a first application software component on a first wireless device in the wireless local area network.

26) The hand-held device of claim 14, wherein the first network service software component includes a flashing software component for providing a flash image to a first wireless device, in the wireless local area network, for updating a first wireless device capability.

27) The hand-held device of claim 14, wherein the first network service software component includes a flashing software component for providing a flash image to a first wireless device, in the wireless local area network, for repairing a first wireless device capability.

28) The hand-held device of claim 14, wherein the first network service software component includes a flashing software component for

providing a flash image to a first wireless device, in the wireless local area network, for adding a first wireless device capability.

29) The hand-held device of claim 14, wherein the first network service software component is a message software component for providing a message between a first wireless device and a second wireless device in the wireless local area network.

30) The hand-held device of claim 14, wherein the first network service software component is a service level enforcement software component for limiting an amount of packets transferred from a first wireless device in the wireless local area network to the wide area network during a period of time.

31) The hand-held device of claim 14, wherein the first network service software component is a Bluetooth<sup>TM</sup> LAN Access Profile software component.

32) The hand-held device of claim 14, wherein the first network service software component is a Bluetooth<sup>TM</sup> Dial-Up Profile Software component.

33) The hand-held device of claim 14, wherein the first network service software component is a Virtual Bluetooth<sup>TM</sup> Dial-Up Profile Software

component for providing packet switching in response to a circuit switching signal.

34) A system for providing communication between a wide area network and a wireless local area network, comprising:

(a) hand-held wireless device having a cellular transceiver for communicating with the wide area network and having a storage device for storing a routing software component for transferring a plurality of packets between the wide area network and the wireless local area network, wherein the hand-held wireless device has a wide area network address; and,

(b) a first wireless device having a 2.4 GHZ transceiver for transferring a first packet in the plurality of packets to the hand-held wireless device, wherein the first wireless device has a first local area network address.

35) The system of claim 34, wherein the first wireless device is selected from a group consisting of a desktop computer, a laptop computer, a personal digital assistant, a headset, a pager, a printer, a watch, a digital camera and an equivalent.

36) The system of claim 34, wherein the hand-held wireless device is a cellular telephone using a Global System for Mobile communications ("GSM") protocol.

37) The system of claim 34, wherein the hand-held wireless device is a cellular telephone using a Code Division Multiple Access ("CDMA") protocol.

38) The system of claim 34, wherein the hand-held wireless device is a cellular telephone using a CDMA2000 protocol.

39) The system of claim 34, wherein the hand-held wireless device is a cellular telephone using a Universal Mobile Telecommunications System ("UMTS") protocol.

40) The system of claim 34, wherein the hand-held wireless device is a cellular telephone using a Time Division Multiple Access ("TDMA") protocol.

41) The system of claim 34, further comprising:

(a) a second wireless device having a 2.4 GHZ transceiver for transferring a second packet in the plurality of packets to the hand-held wireless device, wherein the second wireless device has a second local area network address.

42) An article of manufacture, including a computer readable medium, comprising:

(a) a routing software component for translating between a wide area network address and a local area network address;

(b) a short-range radio software component for providing a short-range radio signal in a wireless local area network; and,

(c) a cellular software component for providing a communication signal in a cellular network.

43) The article of manufacture of claim 42, further comprising:

(d) an interface software component for allowing a network service software component to be added.

44) The article of manufacture of claim 42, wherein the network service software component is a pairing management software component for determining whether a first wireless device is coupled to the wireless local area network, responsive to a signal from a managing processing device in the cellular network.



45) The article of manufacture of claim 42, wherein the network service software component is a virtual private network software component for establishing a secure link.

46) The article of manufacture of claim 42, wherein the network service software component is a firewall software component.

47) The article of manufacture of claim 42, wherein the network service software component is a statistics software component for collecting usage information of the wireless local area network.

48) The article of manufacture of claim 42, wherein the network service software component is a link optimization software component for converting an IP packet from a first wireless device in the wireless local area network to an optimized cellular protocol packet transferred to a processing device in the cellular network.

49) The article of manufacture of claim 42, wherein the network service software component is a reverse firewall software component for dropping a packet from a first wireless device in the wireless local area network.

50) The article of manufacture of claim 42, wherein the network service software component is a reverse firewall software component for dropping a packet from a first application software component on a first wireless device in the wireless local area network.

51) The article of manufacture of claim 42, wherein the network service software component is a flashing software component for providing a flash image to a first wireless device in the wireless local area network.

52) The article of manufacture of claim 42, wherein the network service software component is a message software component for providing a message between a first wireless device and a second wireless device in the wireless local area network.

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53) The article of manufacture of claim 42, wherein the network service software component is a service level enforcement software component for limiting an amount of packets transferred from a first wireless device in the wireless local area to the cellular network during a period of time.

54) A system, comprising:

(a) a managing processing device in a first wide area network;

(b) a hand-held device, coupled to the managing processing device and in a local area network, having a routing software component for transferring a plurality of packets between the first wide area network and the local area network; and,

(c) a device, coupled to the hand-held device and in the local area network, for transferring a first packet in the plurality of packets to the hand-held device.

55) The system of claim 54, wherein the device has an application and wherein the managing processing device has a managing software component for accessing the application.

56) The system of claim 55, wherein the application is a ring tone application.

57) The system of claim 55, wherein the application is a phone book application.

58) The system of claim 54, wherein the routing software component tunnels the plurality of packets to the managing processing device and wherein the managing processing device processes the plurality of packets.

5 59) The system of claim 54, wherein the routing software component maintains a first IP session link with the first wide area network and a second IP session link with a second wide area network.

10 60) The system of claim 54, wherein the routing software component maintains a first IP session link with the first wide area network responsive to the amount of IP packets received.

15 61) The system of claim 54, wherein the routing software component initiates a first IP session link with the first wide area network responsive to a signal from the managing processing device.

62) A system, comprising:

(a) a managing processing device in a wide area network;

20 (b) a hand-held device, coupled to the managing processing device and in a local area network, having a software component for transferring a plurality of packets having an IP destination address from the wide area network to the local area network; and,

25 (c) a device having the IP destination address, coupled to the hand-held device and in the local area network, for receiving the plurality of packets.

63) The system of claim 62, wherein the software component is a routing software component.

30 64) The system of claim 62, wherein the software component is a bridge software component.